

ZAKHARKIN, L.I.; STANKO, V.I.

Complexes of decaborane with organic compounds of phosphorus and  
arsenic. Izv.AN SSSR.Otd.khim.nauk no.11:2078-2079 N '61.  
(MIRA 14:11)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.  
(Decaborane) (Phosphorus organic compounds)  
(Arsenic organic compounds)

ZAKHARKIN, I.I.; STANKO, V.I.; BRATTSEV, V.A.

Reactions of tetrahydrofuran and tetrahydropyran with trimethyl-  
bromosilane and trimethylchlorosilane. Izv.AN SSSR.Otd.khim.nauk  
no.11:2079-2081 N '61. (MIRA 14:11)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.  
(Furan) (Pyran) (Silane)

ZAKHARKIN, L.I.; STANKO, V.I.; OKHLOBYSTIN, O.Yu.

Reactions of decaborane and pentaborane with mercaptans and sulfides.  
Izv.AN SSSR.Otd.khim.nauk no.11:2083-2084 N '61. (MIRA 14:11)

1. Institut organicheskoy khimii im. N.D.Zelinskogo i Institut  
elementoorganicheskikh soedineniy AN SSSR.  
(Decaborane) (Pentaborane) (Sulfides)

ZAKHARKIN, L.I.; STANKO, V.I.; CHAPOVSKIY, Yu.A.

Interaction of acetals and ortho-esters with decaborane and  
diacetonitriledecaborane. Izv.AN SSSR.Otd.khim.nauk no.6:  
1118-1119 '62. (MIRA 15:8)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.  
(Acetals) (Esters) (Decaborane)

STANKE, V.I.; KLENOVA, L.I.; ZAKHARENKO, L.I.

Complexes of decaborane with trialkyl-, triaryl-, trialkyltrithio-  
phosphites, and trialkyl-, trialkyltrithioarsenites. Izv. AN SSSR  
Otd.khim.nauk no.5:919-920 My '62. (MIRA 15:6)

1. Institut elementoorganicheskikh soedineniy AN SSSR.  
(Boron hydrides) (Phosphorous acid) (Arsenious acid)

ZAKHARIKIN, L.I.; STANKO, V.I.; BRATTSEV, V.A.; CHAPOVSKIY, Yu.A.;  
STRUCHKOV, Yu.T.

Structure of  $B_{10}C_2H_{12}$  ("baren") and its derivatives. Izv. AN  
SSSR. Ser. khim. no.11:2069 N '63. (MIRA 17:1)

1. Institut elementoorganicheskikh soedineniy AN SSSR.

I 16184-65 EWT(m)/EPF(c)/EPR/ENP(j)/T/EWA(h) Pc-4/Pr-4/Ps-4/PeB RPI.  
 S/0062/63/000/012/2236/2237  
 ACCESSION NR: AP4045839 WW/JW/RM

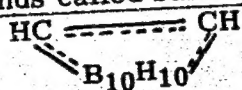
AUTHOR: Zakharkin, L. I.; Stanko, V. I.; Klimova, A. I.; Chapovskiy, Yu. A.

TITLE: The metallization of  $B_{10}C_2H_{12}$  (Baren) and its derivatives with butyl lithium

SOURCE: AN SSSR. Izv. Seriya khimicheskaya, no. 12, 1963, 2236-2237

TOPIC TAGS: baren, baren ring, lithium derivative, monosubstitution, disubstitution,  $B_{sub10}C_{sub2}H_{sub12}$ , baren carboxylic acid, electron acceptor

ABSTRACT: In continuation of earlier papers on the synthesis of a new class of organo-boron compounds called barens of the following structural formula,



this report concerns lithium substitution for the hydrogen at C, resulting in mono- and disubstituted Li derivatives of baren, and monosubstitutions of Li in monoalkyl or monoaryl barens. These were transformed into the corresponding baren

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L 16184-65

ACCESSION NR: AP4045839

carboxylic acids under the influence of  $H_2CO_3$  and  $HCl$ . The compounds are described, reasons for the electron-acceptor properties of the baren ring given. Orig. art. has: 3 formulas

ASSOCIATION: Institut elementoorganicheskiky soedineniy Akademii nauk SSSR  
(Institute of Organo-elemental Compounds of the Acad. of Sciences, SSSR)

SUBMITTED: 28Sep63

ENCL: 00

SUB CODE: GC, OC

NO REF SOV: 002

OTHER: 000

Card 2/2



ZAKHARKIN, L.I.; STANKO, V.I.; KLIMOVA, A.I.; CHAPOVSKIY, Yu.A.

Metalation of  $B_{10}C_2H_{12}$  (baren) and its derivatives by  
butyllithium. Izv. AN SSSR. Ser. khim. no.12:2236-2237  
D '63. (MIRA 17:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

L 15694-65 EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4/Pt-10  
 ASD-3/AFFTC/ESD-3/RPL/SSD(a)/AFTC(p) WW/RM

ACCESSION NR: AP4045840

S/0062/64/000/012/2238/2239

AUTHOR: Zakharkin, L. I.; Stanko, V. I.; Brattsev, V. A.; Chapovskiy, Yu. A.  
Okhlobystin, O. Yu. B

TITLE: Synthesis of a new class of organo-boron compounds,  $B_{10}C_2H_2$  (baren) and its derivatives 7

SOURCE: AN SSSR. Izv. Seriya khimicheskaya, no. 12, 1963, 2238-2239

TOPIC TAGS: organo boron compound, baren, baren derivative, decaborane, acetylenic compound, ligand, baren stability

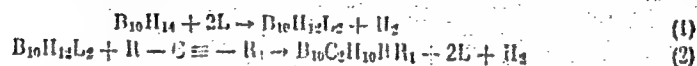
ABSTRACT: Interaction of decaborane with acetylenic compounds in the presence of substances capable of  $B_{10}H_{12}L_2$  (L=ligand) complex formation furnished a new class of compounds of the formula  $B_{10}C_2H_{10}RR_1$ . As ligands  $CH_3CN$ ,  $(C_2H_5)_2As$ ,  $(C_2H_5)_2S$  and  $HCON(CH_3)_2$  were used. The reaction proceeds in 2 stages, according to (1) and (2)

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L 15694-65

ACCESSION NR: AP4045840

3



A yield of up to 80-85% of barens was obtained depending upon the nature of the acetylenic compound. The American patent 3,028,432 (1962) on the reaction of isopropenylacetylene with diacetonitrildecaborane was obtained. Baren and its derivatives show high stability upon exposure to heat, air, heating with strong mineral acids and good stability to alkalis and oxidants, as compared to decaborane. Orig. art. has: 3 formulas

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR (Institute of Organo-Elemental Compounds of the Academy of Sciences, SSSR)

SUBMITTED: 28Sep63

ENCL: 00

SUB CODE: CC, OC

NO REF SOV: 001

OTHER: 002

Card 2/2

ZAKHARKIN, L.I.; STANKO, V.I.; BRATTSEV, V.A.; CHAPOVSKIY, Yu.A.;  
OKHLOBYSTIN, O.Yu.

Synthesis of the new type of organoboron compounds  $B_{10}C_2H_{12}$   
(baren) and its derivatives. Izv. AN SSSR. Ser. khim. no.12:  
2238-2239 D '63. (MIRA 17:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

ACCESSION NR: AP4025016

S/0062/64/000/003/0582/0582

AUTHOR: Zakharkin, L. I.; Stanko, V. I.; Chapovskiy, Yu. A.

TITLE: Metallizing of B sub 10 C sub 2 H sub 12 (baren) and its derivatives with sodamide

SOURCE: AN SSSR. Izv. Seriya khimicheskaya, no. 3, 1964, 582

TOPIC TAGS: metallizing, butyllithium, sodamide, baren, baren aryl derivatives, baren alkyl derivatives, baren ring, baren ring stability, sodium amide, metal spraying

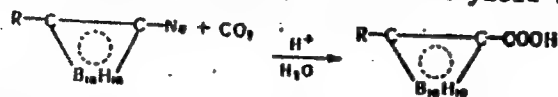
ABSTRACT: Like butyllithium, sodamide will easily metallize baren as well as its aryl and alkyl derivatives at the nucleus of the carbon atom;



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ACCESSION NR: AP4025016

a quantitative yield of the sodium derivative will be obtained upon using an excess of sodamide. Further carboxylation will yield the corresponding acids.



Sodamide treatment will result in the formation of monobarenylsodium only, which is in contrast to treatment with butyllithium. Such metallization indicates the ease with which the proton is detached from the carbon atom of the baren ring, due apparently to the great stability of the barenyl anion. Orig. art. has: 4 formulas.

ASSOCIATION: AN, SSSR

SUBMITTED: 28Nov63

DATE ACQ: 17Apr64

ENCL: 00

SUB CODE: GC

NO REF SOV: 001

OTHER: 000

Card 2/2

ZAKHARKIN, L. I.; STANKO, V. I.; KLIMOVA, A. I.

Halogenation of "baren" and phenyl "baren." Izv. AN SSSR  
Ser Khim no. 4:771 Ap '64. (MIRA 17:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

ZAKHAROV, I.I.; STANKO, V.I.; KLIMOVA, A.I.

Exchange reactions of  $B_{10}H_{12}$  Al-type decaborane complexes.  
Izv. AN. SSSR. Ser. khim. no. 5, 917-918 (1964). (MIRA 17:6)

1. Institut elementoorganicheskikh soedineniy AN SSSR.



ZAKHARKIN, L.I.; SEMENOV, V.I.; ERATSEV, V.A.

Synthesis of some acetylenic alcohols. Izv. AN SSSR. Ser. khim.  
no. 5:931-932 Ky '64. (MIRA 17:6)

1. Institut elementorganicheskikh soedineniy AN SSSR.

ZAKHARKIN, D.I.; STAMBO, V.I.; CHALOVSKIY, Yu.A.

Anomalous reaction of phenylpropionic acid chloride with  
diacetonitrile decaborane. Izv. AN SSSR. Ser. khim. no. 5:944  
My '64. (MIRA 17:6)

1. Institut elementorganicheskikh soedineniy AN SSSR.

ACCESSION NR: AP4034541

S/0020/64/155/005/1119/1122

AUTHOR: Zakharkin, L. I.; Stanko, V. I.; Brattsev, V. A.; Chapovskiy, Yu. A.; Klimova, A. I.; Okhlobystin, O. Yu.; Ponomarenko, A. A. (Deceased)

TITLE: Synthesis and investigation of properties of a new class of organoboron compounds: B sub 10 C sub 2 H sub 12 (barene) and its derivatives.

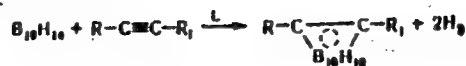
SOURCE: AN SSSR. Doklady\*, v. 155, no. 5, 1964, 1119-1122

TOPIC TAGS: barene, synthesis, organoboron compound, decaborane acetylenic compound reaction, B sub 10 C sub 2 H sub 12, barene derivative, sigma bond formation, hydrolysis stability, thermal stability, acid solvent stability, barene hydrocarbon, barene acetate, dihydroxymethylbarene, haloalkylbarene, dihalodialkylbarene, barene ester, barene ketone, barene ether, halogenation, methanolation, oxidation, Grignard reaction, cyclization

ABSTRACT: The reaction of decaborane with different acetylenic compounds was studied in detail. It was found that in the presence of materials which form complexes of the type  $B_{10}H_{12}L_2$  (L = ligand) with decaborane, a new class of compounds is formed:  $B_{10}C_2H_{10}RR'$ , barenes.

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ACCESSION NR: AP4034541



The reaction is two stage:

1.  $B_{10}H_{12} + 2L \rightarrow B_{10}H_{12}L_2 + H_2$
2.  $B_{10}H_{12}L_2 + RC \equiv CR_1 \rightarrow B_{10}C_2H_{12}RR_1 + 2L + H_2$

where  $L = CH_3CN, (C_2H_5)_2S, (C_2H_5)_3As, CHON(CH_3)_2$ .

The hydrogen is given off between the  $B_5$  and  $B_{10}$  and the  $B_7$  and  $B_8$  in the complex, so the 12 atom system has no hydrogen bridges. X-ray, IR and chemical analyses show that two  $\sigma$ -bonds are formed on reaction with acetylenic compounds. The barenes are stable to hydrolysis, high temperatures and mineral acids. A number of barene compounds were synthesized and characterized: barene hydrocarbons, acetates of alcohols of the barene series, dihydroxymethylbarene, haloalkyl- and dihalodialkylbarenes, complex esters of barene acids and diacids, ketones and simple ethers. Some of the reactions involved are discussed: the reaction of alkyl or aryl barenes with butyllithium with subsequent carbonation to form barene acids; substitution of the boron or carbon hydrogens with halogens; methanolation

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ACCESSION NR: AP4034541

of the acetates to form alcohols; oxidation of the alcohols to acids with  $\text{CrO}_3/\text{H}_2\text{SO}_4$ ; oxidation of hydroxymethylbarene with  $\text{KMnO}_4$  to form barene; Grignard reaction; cyclization during reaction of a complex decaborane with the chloranhydride of phenylpropionic acid to form a barene derivative. Orig. art. has: 1 table and 12 equations.

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR  
(Institute of Organometallic Compounds, Academy of Sciences, SSSR)

SUBMITTED: 08Oct63

ENCL: 00

SUB CODE: 00

NO REF SOV: 001

OTHER: 003

Card 3/3

L 22442-65 ENT(m)/EPF(c)/EPR/ENP(j) Pc-4/Pr-4/Ps-4 RPL WW/RM  
ACCESSION NR: AP5000489 S/0062/64/000/011/2091/2093

AUTHOR: Zakharkin, L. I.; Stanko, V. I.; Brattsev, V. A.

TITLE: A method of oxidizing phenylbaren and its derivatives

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 11, 1964, 2091-2093

TOPIC TAGS: baren, phenyl baren, baren oxidation resistance, phenylbaren peroxidation

ABSTRACT: The baren skeleton ( $C_2B_{10}H_{12}$ ) is unusually stable to oxidants. However, a 2-stage method has been found for oxidizing phenylbaren and its derivatives in alcohol solution, first by hydrogen peroxidation in the presence of NaOH or KOH, followed by further oxidation with  $CrO_3/H_2SO_4$ . Thus oxidation of the known p-chloro, p-bromo, p-nitrophenylbarens to the corresponding benzoic acids was accomplished. By means of this method, the location of the Cl-substituents in chlorinated phenylbaren was determined. This 2-stage method, complemented by IR spectroscopy, etc., affords determination of the location of the substituents at the baren as well as the phenyl ring. Orig. art. has: 3 formulas

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L 22442-65

ACCESSION NR: AP5000489

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR  
(Institute of Organo-Elemental Compounds, Academy of Sciences, SSSR)

SUBMITTED: 30Mar64

ENCL: 00

SUB CODE: OC

NR REF SOV: 004

OTHER: 003

Card 2/2

L 16439-65 EWT(m)/EFF(c)/EPR/ENP(j) Pc-l/Pr-l/Ps-l RPL/SSD/SSD(a)/ESD/AFWL/  
ASD(a)-5/AFMD(t)/AFTC(p) WW/RM

ACCESSION NR: AP4043838

S/0020/64/157/005/1149/1152

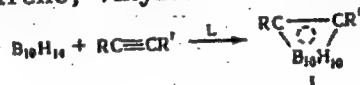
AUTHOR: Zakharkin, L. I.; Stanko, V. I.; Brattsev, V. A.; Chapovsky, Yu. A. B

TITLE: Some specific features of structure and reactivity of barene compounds

SOURCE: AN SSSR: Doklady\*, v. 157, no. 5, 1964, 1149-1152

TOPIC TAGS: decaborane, decaborane reaction, barene compound, decaborane acetylene derivative reaction, phenylbarene, vinylbarene, barene cyclic derivatives, infrared spectrum, hydrogen bridge, C H bond, B B bond, olefin bond, electron acceptor, proton mobility, nuclear electron cloud, barene stability

ABSTRACT: This study concerns chemical reactions and the analysis of IR spectra for barene, phenylbarene, vinylbarene and 2 cyclic derivatives, according to the general formula:



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L 16439-65

ACCESSION NR: AP4043838

None of the IR spectra showed the presence of hydrogen bridges. Monosubstituted compounds showed valence vibration of the C-H bond of the barene nucleus at  $3050-3075\text{ cm}^{-1}$ ; no C-H bond vibration was seen in disubstituted compounds. All compounds had absorption bands at  $720-730\text{ cm}^{-1}$ , due apparently to valence vibration of the B-B bond. There was no indication of an olefin double bond, only a strong vinyl frequency. The absence of double bonds may also be seen in the resistance of barene to halide addition and strong oxidizers. B-decachlorobarene shows B-Cl bond vibration, nitrobarene a band indicative of C-NO<sub>2</sub> vibration. Shift of the CO group in carboxylic acids of barene to high frequencies indicates that the barene nucleus is an electron acceptor group (its I-effect is higher than that of F, Cl and COOH). The strong electron-acceptor effect is conditioned by the high proton mobility of the C-linked hydrogen atoms. Another characteristic of the barene system is the high lability of the nucleus electron cloud; the easy conductivity of substitutions through the nucleus is shown by examples. Orig. art. has 15 formulas and 1 figure

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR

Card 2/3

L 16439-65

ACCESSION NR: AP4043838

(Institute of Organochemical Compounds, Academy of Sciences, USSR)

SUBMITTED: 08Feb64

ENCL: 00

SUB CODE: GC, FP

NO REF SOV: 008

OTHER: 005

Card 3/3

ZAKHARKIN, L.I.; STANKO, V.I.; BRATTSEV, V.A.; CHAPOVSKIY, Yu.A.

Some special features of structure and reactivity of organo-  
boron complex compounds. Dokl. AN SSSR 157 no.5:1149-1152  
Ag '64. (MIRA 17:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.  
Predstavleno akademikom A.N. Nesmeyanovym.

ZAKHARKIN, L.I.; STANKO, V.I.; BRATTSEV, V.A.

Method of oxidation of phenylbarene and its derivatives. Izv. AN  
SSSR Ser. khim. no.11:2091-2093 N '64 (MIRA 18:1)

1. Institut elementoorganicheskikh soye ineniy AN SSSR.

ZAKHARKIN, L.I.; CHAPOVSKIY, Yu.A.; STANKO, V.I.

Dissociation constants of some benzenecarboxylic acids. Izv. AN  
SSSR Ser. khim. no.12:2208-2209 D '64 (MIRA 18:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

L 26610-65 EWT(m)/EPF(c)/EPR/EWP(j)/EWA(h)/EWA(c) Pc-l/Pr-l/Ps-l/Peb RPL WW/  
 ACCESSION NR: AP5005556 JW/RM S/0079/65/035/002/0394/0395

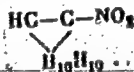
AUTHOR: Zakharkin, L. I.; Stanko, V. I.; Klimova, A. I.

TITLE: Nitration of barene

SOURCE: Zhurnal obshchey khimii, v. 35, no. 2, 1965, 394-395

TOPIC TAGS: barene, nitrobarene, organoboron compound, nitration

ABSTRACT: Nitration of barene with 100% HNO<sub>3</sub> at 20C was used to obtain nitrobarene,



The melting point of the compound obtained was 100—101C. The IR spectrum indicates the position of the nitro group at one of the carbon atoms of the barene ring. Nitration of phenylbarene results in substitution in the phenyl ring. Orig. art. has: 1 formula. [BN]

ASSOCIATION: none

SUBMITTED: 23May64

NO REF SOV: 002

Card 1/1

ENCL: 00

OTHER: 000

SUB CODE: OC, GC

ATD PRESS: 3188

3 47157-65 EWT(m)/EPF(c)/EPR/ENP(j)/T pc-4/pr-4/ts-4 RFL WW/JWD/RM

UR/0079/65/035/005/0930/0931

ACCESSION NR: AP5013149

AUTHOR: Stanko, V. I.; Struchkov, Yu. T.

TITLE: Structure of barene

SOURCE: Zhurnal obshchey khimii, v. 35, no. 5, 1965, 930-931

TOPIC TAGS: barene, carborane, barene derivative, barene structure

ABSTRACT: The authors are conducting a close study of the crystalline structure of such barene (carborane) derivatives as  $\text{HCB}_{10}\text{H}_9\text{ClCH}$ ,  $\text{HCB}_{10}\text{H}_8\text{Br}_2\text{CH}$ ,  $\text{HCB}_{10}\text{H}_9\text{ICH}$ , and of the neobarene (neocarborane)  $\text{neo-HCB}_{10}\text{H}_8\text{I}_2\text{CH}$ . Study of the crystalline structure of  $\text{C}_6\text{H}_5\text{—CB}_{10}\text{H}_9\text{ICH}$  (I) showed that its crystals belong to the  $\text{P2}_1/\text{C}$  space group of the monoclinic system ( $a = 7.34 \text{ \AA}$ ;  $b = 7.39 \text{ \AA}$ ;  $c = 27.72 \text{ \AA}$ ;  $\beta = 102.30^\circ$ ;  $N = 4$ ). From the three-dimensional series of electron densities it was found that the molecule of compound I has an icosahedral framework (see Fig. 1 of the Enclosure). All the bonds of the icosahedron are  $1.7 \pm 0.1 \text{ \AA}$  long. The icosahedral arrangement is nearly regular in spite of the presence of C—C and B—C bonds. Orig. art. has: 1 figure. [B0]

ASSOCIATION: none

Card 1/3

SEMIN, G.K.; ROBAS, V.I.; STANKO, V.I.; BRATTSEV, V.A.

Nuclear quadrupole resonance spectra of  $\text{Cl}^{35}$  and  $\text{Br}^{79}$  in halo derivatives of the barene series. Zhur. strukt. khim. 6 no.2:305-307 Mr-Ap '65.  
(MIRA 18:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.



STANKO, V.I.

Preparation of acids of the barene series. Zhur. ob. khim. 35  
no.7:1139-1141 J1 '65. (MIRA 18:8)

STANKO, V.I.; KLIMOVA, A.I.

Reaction of lithium derivatives of baren hemologs with  
benzaldehyde. Zhur. ob. khim. 35 no.7:1141-1142 J1 '65.  
(MIRA 18:8)

STANKO, V.I.; KOPYLOV, V.V.; KLIMOVA, A.I.

Hydrocarbons of the carborane series. Zhur. ob. khim. 35  
no.8:1433-1436 Ag '65. (MIRA 18:8)

STANKO, V.I.; KLIMOVA, A.I.

Cleavage of ketones of the carborane series on aluminium oxide.  
Zhur. ob. khim. 35 no.8:1503-1504 Ag '65. (MIRA 18:8)

STANKO, V.I.; CHAPOVSKIY, Yu.A.; BRATTSEV, V.A.; ZAKHARKIN, L.I.

Chemistry of decaborane and its derivatives. Usp. khim. 34  
no.6:1011-1039 Je '65. (MIRA 18:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

L 22645-66 EWT(m)/EWP(j)/T WW/JW/JWD/RM  
ACC NR: AP6009156 SOURCE CODE: UR/0079/66/036/003/0432/0436

AUTHOR: Stanko, V. I.; Klimova, A. I.

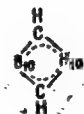
ORG: none

TITLE: The neobarene family

SOURCE: Zhurnal obshchey khimii, v. 36, no. 3, 1966, 432-436

TOPIC TAGS: organoboron compound, halogenation

ABSTRACT: The article describes a new class of organic compounds, the neocarboranes, which the authors refer to as neobarenes and represent by the symbol



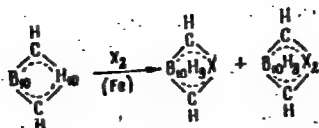
The neobarenes are very similar to barenes in properties and differ chiefly in IR spectra, lower melting points, and certain differences in chemical properties. Like barenes, the compounds neobarene, neomethylbarene, neophenylbarene, neochlorobarene, neobromobarene, and neiodobarene can be vacuum-distilled at 70-125°C. Their melting points are 10-30°C below those of the corresponding barenes. Electrophilic chlorination, bromination, and iodination of neobarenes involves the penetration of two halogen atoms into the boron ring:

UDC: 546.271

Card 1/2

L 22645-66

ACC NR: AP6009156



The IR spectra of barene, neobarene, B-decachlorobarene, and neo-B-decachlorobarene are compared, and the preparation, isomerization, and halogenation reactions of some neobarenes are described. Orig. art. has: 1 figure, 1 table.

SUB CODE: 07/

SUBM DATE: 20Jul64/

ORIG REF: 000/

OTH REF: 001

Card 2/2 *AW*

L 08657-67 EWP(j)/EWT(m)/EWP(e)/EWP(t)/ETI IJP(c) RM/WI/JW/JWD/JD  
 ACC NR: AP6013742 SOURCE CODE: UR/0192/65/006/006/0923/0925 49

AUTHOR: Struchkov, Yu. T.; Stanko, V. I.; Klimova, A. I.; Kon'kova, G. S.

ORG: Institute of Elementoorganic Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: X-ray diffraction of some derivatives of borane and neoborane

SOURCE: Zhurnal strukturnoy khimii, v. 6, no. 6, 1965, 923-925

TOPIC TAGS: inorganic synthesis, borane, crystal structure, x ray diffraction

ABSTRACT: The crystalline structure of a series of boranes and neoboranes was studied by X-ray diffraction. The cell parameters, density, spatial configuration, and crystal forms were tabulated for B-dichloroborane, B-bromoborane, B-iodoborane, B-diiodoborane, B-triiodoborane, B-dichloro-C-methylborane, B-trichloro-C-methylborane, B-dibromo-C-methylborane, I-bromo-2-borenyloethane, C-(p-bromophenyl)borane, bis(C-vinylborenyl)mercury, C-vinylborenyl methyl mercury, B-iodoneoborane, B-diiodoneoborane, and B-decachloroneoborane. The authors express their gratitude to R. L. Avoyan for assistance in the X-ray study and to V. I. Bregadza for preparation of the two mercury compounds. Orig. art. has: 1 table.

SUB CODE: 07/ SUBM DATE: 01Jul65/ ORIG REF: 001

UDC: 548.737

Card 1/1



SHALYAPIN, V.V.; STANKO, Ye.A.

Investigating blood pressure and respiration in experimental epilepsy.  
Fiziol.zhur. (Ukr.) 1 no.3:43-50 My-Je '55. (MLRA 9:9)

1. Odes'kiy medichniy institut, Kafedra patologichnoi fiziologii.  
(EPILEPSY) (BLOOD PRESSURE) (RESPIRATION)

STANKO, V.I.; KLIMOVA, A.I.

Barenyl anion. Zhur. ob. khim. 3<sup>r</sup> no.4:753 Ap '65. (MIRA 18:5)

RESEARCH, A. J. PAVLOV, A.

"Our Experiment and Results from Treatment of the Fistulas of Tuberculosis  
in the Joints During 1952-1953." p. 2,  
(ZDRAVEN FRONT, No. 46, Nov. 1954, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4  
No. 5, May 1955, Uncl.

PAVLOV, G.; STANKOV, Al.; DIMOV, M.

Our experience with the removal of vertebral foci and abscesses in  
tuberculous spondylitis. Khirurgiia, Sofia 14 no.2/3:337-338 '61.

(TUBERCULOSIS SPINAL surg)

STANKOV, Al.

Our experience with compression arthrosis of the knee joint.  
Khirurgiia 15 no.2/3:204-207 '62.

1. Iz Sanatorium za vuzrastni, bolni ot kostno-stavna tuber-  
kuloza - Varna.  
(TUBERCULOSIS OSTEOARTICULAR surg)  
(KNEE dis)

STANKOV, Asp.

Advance of the innovation movement at the Plant 12. Ratsionalizatsia  
no.8:9-12 '62.

STANKOV, Asparukh

Experiment Station of Plant 12 strengthens and improves its activities. Ratsionalizatsiia 13 no. 10:13-14 '63.

STANKOV, A. G., AL'TIMAN, S. A. and GRIGORAHENKO, A. E.

"Materials for the Study of Toxoplasmosis in Odessa."

Tenth Conference on Parasitological Problems and Diseases with Natural Reservoirs, 22-29 October 1959, Vol. II, Publishing House of Academy of Sciences, USSR, Moscow-Leningrad, 1959.

Odessa Scientific Research Institute of Epidemiology and Microbiology



KOROVITSKIY, Leonid Konstantinovich, prof.; GRIGORASHENKO,  
Aleksandr Yefimovich, dots.; STANKOV, Aleksandr  
Georgiyevich; CHERNYAVSKAYA, Larisa Vasil'yevna;  
GRINBERG, G.I., red.

[Toxoplasmosis; epidemiology, clinical aspects, treatment  
and prevention] Toksoplazmoz; epidemiologiya, klinika,  
terapiya i profilaktika. [By] L.K.Korovitskii i dr. Kiev,  
Gosmedizdat USSR, 1962. 187 p. (MIRA 18:6)

STANKOV, Anatoliy Gavrilovich

[Human anatomy] Anatomia cheloveka. Moskva, Medgiz, 1959.  
465 p. (MIRA 13:9)

(ANATOMY, HUMAN)

STANKOV, Anatoliy Gavrilovich; RAFAL'SKAYA, Ye.B., red.; BUL'DYAYEV,  
N.A., tekhn.red.

[Health and longevity] Zdorov'e i dolgoletie. Moskva, Gos.  
izd-vo med.lit-ry Medgiz, 1960. 190 p.

(MIRA 14:2)

(HYGIENE)

(LONGEVITY)

GRIGORACHENKO, A.Ye.; STANKOV, A.G.; CHERNEVSKAYA, L.V.

Data on a study of the epidemiology of some forms of glandular toxoplasmosis. Vrach. delo no.6:93-96 Je'63.(MIRA 16:9)

1. Odesskiy institut epidemiologii i mikrobiologii.  
(TOXOPLASMOSIS) (TONSILS—DISEASES)

STANKOV, A. V.

~~RESTRICTED THORACIC RESPIRATORY MOVEMENTS IN TUBERCULOUS SPONDYLITIS~~

Restricted thoracic respiratory movements in tuberculous spondylitis. Suvrem. med., Sofia 6 no.12:23-26 1955.

1. Iz Sanatoriuma za kostno-stavna tuberkuloza za vuzrastni kraj gr. Stalin (gl. lekar: G. S. Pavlov).  
(TUBERCULOSIS, SPINAL, physiology, resp. movements of thorax. (Bul))  
(RESPIRATION, in various diseases, tuberc., spinal. (Bul))

STANKOV, D.

The lightest wire netting. p. 81. SAGBRACAJ. Srpska akademija nauka.  
Odeljenje tehnickih nauka. GLAS. Beograd. Vol. no. 220, 1956.

SOURCE: East European Accessions List, (EEAL), Library of Congress,  
Vol. 5, no. 12, December 1956

SIANKOV, D.

Reflections on the network theory. p. 51.

ZBORNIK RADOVA. (Srpska akademija nauka. Masinski institut.)  
Beograd, Yugoslavia. Vol. 60, 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 8, Aug. 1959.

Uncl.

STANKOV, Dusan, inzinjer, redovni profesor honorarni nauoni saradnik

A method for the direct dimensioning of statically undetermined lattices. Zbornik rad Mas inst SAN no.70:1-22 '61.

1. Univerzitet u Beogradu i Masinski institut Srpske akademije nauka i umetnosti.

(Structural frames) (Elasticity)



MILSKOVA, Donka T.; STANKOV, Georgi

Filiform crystals, crystals with unusual properties.  
Priroda Bulg 13 no. 2:72-75 Mr-Apr '64.

1. *Introduction*

Some peculiarities of the daylight horizontal visibility over Sofia resulting from the dust pollution of the atmosphere. Khairo i meteorolog 13 no. 5:66-68 '64.

SARASON, I.

"General Review of Workers' Inventions and Rationalizations During 1953",  
P. 4, (RATSIONALIZATSIYA, Vol. 4, No. 1, Jan. 1954, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4,  
No. 1, Jan. 1955, Uncl.

STANKOV, Iotko

Achievements and shortcomings of rationalization in the nine months of 1962. Ratsionalizatsiia no.11:1-4 '62.

1. Chlen na Redaktsionnata kolegiia, "Ratsionalizatsiia standardizatsiia".

STANKOV, Iotko

Striving for the communist labor, purest form of socialist  
competition. Trud tseni 4 no.5:1-8 '62.

STANKOV, Iotko

Public construction bureaus actively helping inventors and rationalizers.  
Ratsionalizatsiia no. 7:4-7 '62.

1. Chlen na Redaktsionnata kolegiia, "Ratsionalizatsiia standardizatsiia".

STANKOV, Iotko

Inventors and innovators are at the head of the movement for  
communist labor. Ratsionalizatsiia 14 no.6:1-3 '64

1. Central Council of the Bulgarian Trade Unions.

S. ANKOV, k.

Experiments in irrigation with artificial hollows in the Soviet Union.  
p. 29 Khidrotekhnika i Melioratsii Vol. 3, No. 1, 1958. Sofia Bulgaria

Monthly Index of East European Accessions (EMAI) LC, Vol. 7, No. 10,  
Oct. 58



STANKO, Kh-Z		PROCESSING AND PROPERTIES INDEX	
CA	<p>Growing molds of the <i>Aspergillus</i> family. V. V. Vyatkin, Kh. Z. Stan'kov, A. G. Loginov, D. N. Klimovskii, R. V. Peniksova, and G. P. Zelikman. U.S.S.R. 68,325, Apr. 30, 1947. Spores are started in a liquid substratum where they are kept submerged for 16-20 hrs. with continuous aeration in the presence of an antiseptic. Nine-tenths of the culture is transferred to a larger vessel wherein it is mixed with fresh mash taken in a ratio of 1:10. To the remaining <math>\frac{1}{10}</math>, fresh nutrient is added to make up the original vol. and the process is continued.</p> <p>M. Hosh</p>		11C
<p>ASH, S. L. METALLURGICAL LITERATURE CLASSIFICATION</p>			

STAN'KOV, Kh. Z.

*Aspergillus niger* S-4, a variant with high functional fermenting enzymes for use in the distilling industry. Kh. Z. Stan'kov. *Trudy Vsesoyuz. Nauch.-Issledovatel. Inst. Spirtov. Prom.* 1954, No. 3, 70-81; *Koferak. Zhur. Khim., Biol. Khim.* 1955, No. 5364.—Continuous deep culture of *A. niger* S in combination with *A. oryzae* was kept for a prolonged period of time. From this combined culture a variant was isolated, *A. niger* S-4, which possessed high emolytic activity. It was successfully used as a substitute for malt fermentation. CH  
B. S. Levine

STAN'KOV, Kh.Z.

Ways and means for increasing the fermentation activity of mold  
fungi. Trudy TSNIISP no.6:117-122 '58. (MIRA 14:12)  
(Molds (Botany)) (Fermentation)

STAN'KOV, Kh.Z.

Composition of the culture medium as a factor determining the fermentation activity of different strains of fungi. Trudy TSNIISP  
no.7:63-69 '59. (MIRA 13:9)

(Fermentation) (Fungi)

BEICHEV, K., inzh.; TODOROV, V., inzh.; STANKOV, L., inzh.

Mechanical control in screen analysis. Min delo 17 no.7:12-14 JI '62.

1. Nauchnoizsledovatel'ski institut za goriva i toplotekhnika (for Belchev and Todorov). 2. Duzhavno minno predpriatie "Bolshevik" (for Stankov).

STANKOV, N.V.

New boring machinery produced by the Ural Machinery Plant. Sbor.  
st.UZTM no.2:138-149 '58. (MIRA 11:12)  
(Sverdlovsk--Machinery industry) (Boring machinery)

BORKOVSKAYA, L.V.; GULYANSKAYA, Ye.A.; ZYKUNOVA, K.I.;  
LITOVCHENKO, Ye.P.; PERK, M.G.; RASSOKHIN, V.V.;  
kand. tekhn. nauk; TKACHENKO, A.I.; STANKOV, N.V.,  
inzh., retsenzent; ALEKSEYEVSKIY, G.V., inzh., retsenzent;  
PIONTEK, Ye.I., inzh., red.

[Album of assignments for executing assembly drawings] Al'-  
bom zadaniy dlia vypolneniia sborochnykh chertezhei. [By]  
L.V.Borkovskaia i dr. Moskva, Mashinostroenie, 1964. 72 p.  
(MIRA 17:9)

STANKOV, N.V., TARYNIN, V.V.

U2-4 mud pumps. Mash. i neft. obor. no.4:3-5 '65. (MIRA 18:5)

1. Ural'skiy zavod tyazhelogo mashinostroyeniya imeni Sergo  
Ordzhonikidze.



*Planting*

*1944*

Application of fertilizers to boggy soils. O. K. KEDROV-ZIMMAN and N. Z. STANKOV (editors) (Hort. Abs., 1947, 17, 187). Publ. Lenin Acad. Agr. Sci., U.S.S.R., 1940, pp. 40. Various aspects of Russian bog soils are described by several authors with reference to the application of manures, particularly for hemp and kok-saghir. 1228.5254

CA

15

The biological activities of composts. N. Z. Stankov.  
*Soviet Agron.* 9, No. 8, 74-80(1951).—Comparisons of yeast  
cells and mineral salts contg. equiv. amts. of N and P in sand-  
soil cultures show that yeasts give higher yields. On the  
basis of these expts. composts are prepd. which are biologi-  
cally activated. When such composts are placed close to  
seeds the yield is greater. I. S. Ioffe

STANKOV, N. Z.

Roots (Botany)

Methods of obtaining roots for counts. Dokl. Ak.ssel'khoz. 16 no. 11, 1951.

Monthly List of Russian Accessions, Library of Congress, May 1952. Unclassified.

1. STANKOV, N. Z.
2. USSR (600)
4. Plants - Nutrition
7. Can grass roots assimilate nutritive elements from dry soil? Korm. baza  
3 no. 10, 1952

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

STANKOV, N.Z.

Role of symbiotrophic feeding in young plants. Fiziol.rast. 3 no.2:  
173-175 Mar-Apr '56. (MIRA 9:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut udebraniy agrotekhniki  
i agropochvedeniya (VIUAA), Moskva.  
(Plants--Nutrition)

COUNTRY : USSR  
 CATEGORY : Cultivated Plants. Methods of Experimentation. M  
 ABS. JOUR. : RZhBiol., No. 3, 1959, No. 10871  
 AUTHOR : Stankev, N. Z.  
 INST. :  
 TITLE : Methods and Procedures of the Study of the Root Systems of Plants Under Field Conditions.  
 ORIG. PUB. : Byul. geogr. seti opytov s udobreniyami, 1957, No. 1, 34-66.  
 ABSTRACT : Described are: the procedures in taking the test samples of the roots during the agricultural soil testing (the trench field method and the method of the soil column) and in combination with the scientific agricultural studies (the columnar method and the boring method), procedures in washing off the roots, and determination of their volume. Also discussed is the problem of the reliability of the field methods of calculating the roots. Of the methods of the study of the root systems in permanent field installations, there are described the trench method and the box method. Bibliography of 52 titles.

CARD: 1/1

USSR / Plant Physiology. Mineral Nutrition.

I-2

Abs Jour : Ref Zhur -- Biol., No 22, 1958, No 99915

Author : Stankov, N. Z.

Inst : All Union Inst. of Fertilizers and Soil Improvement

Title : The Role of Soil Proteins in Plant Nutrition

Orig Pub : Biol. Nauchn. Tekhn. Inform. Vses. N.-I. Inst. Udobr. i  
Agropochvoved., No 3, 34-38, 1957.

Abstract : Vegetative experiments with a mixture of clover and timothy,  
and also with oats, designed to clarify the role of various  
forms of organic N (humic compounds, plant residues,  
microbe plasma, bacteria, and fungi) in plant nutrition,  
have shown that the microbe plasma (yeasts) is the best  
source of N. It is concluded that the protein of the  
microbe plasma of microorganisms is the principal form of  
the soil's organic substance ensuring the nutrition of  
plants with N. -- A. N. Pavlov.

Card 1/1

STANKOV, N.Z.

Methods and practices used in studying root length. *Fiziol. rast.*  
7 no.6:736-739 '60. (MIRA 14:1)

1. All-Union Scientific Research Fertilizer and Soil Institute,  
Moscow.

(Roots (Botany))

(Botanical research)



STARKOV, Nikolay Yakharovich; LITKOVA, M.M., red.

[Root system of field crops] kornevaya sistema polevykh  
kult'ur. Moskva, Izd-vo "Kolos," 1964. 279 p.  
(MIRA 17:8)

STANKOV, Petr Gavrilovich; PAVLENKO, Fedor Andrianovich, kand.  
sel'khoz. nauk; ZAKHAROVA, Z.A., red.

[Nursery of ornamental woody plants] Drevesno-dekorativ-  
nyi pitomnik. Kiev, Urozhai, 1965. 273 p.  
(MIRA 19:1)

STANKOV, Stanko

Forms of labor wages in the furniture industry. Durvomebel  
prom 7 no.4:26-28 J1-Ag '64.

1. Chief, Planning Department of the "9-i septemvri"  
State Industrial Enterprise, Burgas.

STANKOV, Stefan, inzh.

Structural shaping of the main joint in concrete gravity and  
buttress dams. Khidrotekh i melior 8 no.8:247-248,253 '63.

အသံကွဲပြားစွာ ပြောဆိုရန်။

1. Name of the person side in connection with: Jams. Khidrotekh  
 2. Date of birth: 8-235-236 '64.

STANKOV, S.; TROFIMOV, V.; VVEDENSKIY, A.; SVIRIDOV, A., inzh. vodnogo  
transporta; CHERNOV, M., inzh. vodnogo transporta

Improve the management of the consolidated inland waterway  
network. Rech. transp. 24 no.10:1-3 '65. (MIRA 18:12)

1. Nachal'nik Glavnogo upravleniya rechnogo flota pri Sovete  
Ministrov KazSSR (for Stankov). 2. Nachal'nik Kamskogo rechnogo  
parokhodstva (for Trofimov). 3. Nachal'nik Severnogo rechnogo  
parokhodstva (for Vvedenskiy).

Stankov, S. S.

"Geometry of Latticed Domes." Sub 12 Jun 51, Moscow Order of the Labor Red  
Banner Construction Engineering Inst imeni V. V. Kuybyshev

Dissertations presented for science and engineering degrees in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

STANKOV, S.S., kand.tekhn.nauk

Geometry of reticulated domes (network with a variable angle  
of crossing between billars of varying length). Trudy GPI 14  
no.7:41-47 '58. (MIRA 14:3)

(Domes)



DECEASED

1972-1982  
STANKOV, Sergey Sergeyevich, doktor biolog. nauk; NEKHLIYUDOVA, A.S., red. 1964  
izd-va; NAZAROVA, A.S., tekhn. red.

[Plant kingdom and its significance to man] Mir rastenii i ego znachenie dlia cheloveka. Moskva, Izd-vo "Znanie," Vses. ob-va po raspr. polit. i nauchn. znani, 1961. 37 p. (Narodnyi universitet kul'tury: Fakul'tet estestvenno-nauchnyi, no.9) (MIRA 14:9)  
(Botany, Economic)

BUKSHTEYN, Moisey Solomonovich; ~~SEANKOV, S.B.~~; red.;  
CHERTOV, A.S.; red.; CHUVIROV, N.I.; dots.; red.;  
BLAGOV, V.F.; red.; PTITSYN, K.N.; red.

[Album of drawings for detailed work in electrical and  
radio engineering] Al'bom chertezhei dlia detalirovok  
po elektrotekhnike i radioelektronike. Moskva, Energiia  
1964. diags. (MIRA 18:1)

1. Starshiy prepodavatel' radiotekhnicheskikh kafedr  
Gor'kovskogo politekhnicheskogo instituta (for Blagov,  
Ptitsyn).

BULGARIA

Vladimir STANKOV, Assistant Economist (ikonomist-asistent) VVM (Abbreviation not clarified.)

"Evaluation of Economic Effects of Veterinary Medical Efforts."

Sofia, Veterinarna Shirkha, Vol 50, No 11, 1961: pp 5-8.

Abstract: Rumbling criticism of the many types of self-deceptive and unwittingly deceptive practices in assessing effects of prophylactic and therapeutic measures on efficiency of animal production. The main fault is failing to take into account all of the costs involved, and comparing figures which are not comparable.

1/1

SUN 3/25/90, Ch. 1.

Using frogs for the intersection of crane and railroad tracks.  
Mor. flot 24 no.3:11-13 Mr '64. (MIRA 17:6)

Mr. flot 24 nc.3:11-13 Mr '64.

(MIRA 17:6)

1. Nachal'nik otдела mekhanizatsii Il'ichevskogo porta.

L 60837-65 EWT(m)/EWP(t)/EWP(b) IJP(c) JD  
 ACCESSION NR: AP5017670

UR/0109/65/010/007/1325/1327  
 539.293.011.43

22  
 B

AUTHOR: Goryunov, N. N.; Ovechkin, Yu. A.; Savchenko, A. M.; Stankova, A. V.;  
 Tolkacheva, Ya. A.; Feoktistov, Yu. F.

TITLE: Investigation of secondary punch-through in transistors

SOURCE: Radiotekhnika i elektronika, v. 10, no. 7, 1965, 1325-1327

TOPIC TAGS: transistor punch through, secondary punch through, transistor break-  
 down, alloy transistor, diffusion alloy transistor, germanium transistor/P16 tran-  
 sistor, P416 transistor

ABSTRACT: The phenomenon of secondary punch-through was investigated in alloy ger-  
 manium transistors and diffusion-alloy germanium transistors. The transistors were  
 altered to impair heat transfer from the collector junctions in order to aid the  
 development of secondary punch-through. A rectangular current pulse with a height  
 of 0.05—1.0 amp and a duration of 0.1—1.5 msec was fed through the transistors.  
 The base terminal was not connected in the circuit, and the voltage between the  
 collector and emitter was observed with an oscillograph. In a majority of the tran-  
 sistors tested, a sudden drop in voltage occurred at the instant of secondary punch-

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ACCESSION NR: AP5017670

through 5—20 usec after the start of the current pulse. In some of the specimens, the voltage drop occurred twice, with collector-emitter voltage dropping to 8—30 v and then to 2—5 v. The first drop corresponded to the development of secondary punch-through; the second was ascribed to "tertiary" punch-through which is the result of the sequential formation of two or more channels of local heat breakdown similar to the sequential "igniting" of microplasma regions during the breakdown of nonhomogeneous junctions. The effect of a 15-koe magnetic field on the development of secondary punch-through was also studied. It was found that the delay time in alloy transistors varies greatly when the magnetic field intensity and orientation are varied. When the magnetic field was perpendicular to the collector-emitter axis, delay time increased several times. If a pulse duration is chosen which is shorter than the delay time at a certain value of magnetic field intensity, the punch-through state in the transistor may be turned on and off by varying the magnetic field. The orientation of the magnetic field had no marked effect on the values of diffusion-alloy transistors. Orig. art. has: 2 figures. [DW]

ASSOCIATION: none

SUBMITTED: 19Mar64

ENCL: 00

SUB CODE: EC

NO REF SOV: 000

OTHER: 003

ATD PRESS: 4063

Card 2/2 *jek*

ACC NR: AP6036161

SOURCE CODE: UR/0188/66/000/005/0017/0021

AUTHOR: Levshin, V. L.; Pirinchiyeva, R. K.; Stankova, A. V.

ORG: Department of Optics (Kafedra optiki)

TITLE: Change in the optical characteristics of phosphors when the ratio of the components of the base is changed

SOURCE: Moscow. Universitet. Vestnik. Seriya III. Fizika, astronomiya, no. 5, 1966, 17-21

TOPIC TAGS: luminor, luminescence center, rare earth element, activated crystal, indium compound optic material, yttrium compound, *phosphor*

ABSTRACT: The authors have investigated the influence of a change in the lattice constant and the width of the forbidden band on the luminescence centers of rare-earth ions in mixed crystals. For this purpose, a continuous series of  $Y_2O_3 \cdot In_2O_3$  solid solutions activated with rare-earth elements, was synthesized. The synthesis procedure is described briefly. The activators were Er, Tu, Tb, and Eu. The width of the forbidden band was determined from the reflection spectra, using as the continuous spectrum source a xenon lamp (DKSSh-200). A spectrophotometer (SF-4) served as the monochromator. The reflection spectra were recorded point by point (with an FEU-18A photomultiplier, a dc amplifier, and a galvanometer) and normalized against chemically pure powdered MgO. With the increasing content of  $In_2O_3$ , up to 20 mol.%, the width of the forbidden band decreased rapidly, but with further increase of  $In_2O_3$  concentration

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UDC: 535.373.1

ACC NR: AP6036161

it decreased with decreasing lattice constant more slowly and almost linearly. This behavior is similar to that observed in other solid solutions such as ZnS-CdS. The 2.94 ev width obtained for pure  $\text{In}_2\text{O}_3$  is apparently lower than the value 3.5 ev quoted in the literature. The reason for the discrepancy is not yet clear. Variation of the lattice constant with increased content of  $\text{In}_2\text{O}_3$  did not affect qualitatively the luminescence spectra, other than a change in the magnitude of the internal crystalline field (without change in its symmetry) and a slight shift of different lines, as well as a drop in the total intensity. The latter is due to the quenching action of the indium oxide. Orig. art. has: 4 figures and 1 formula.

SUB CODE: 20// SUBM DATE: 09Apr65/ ORIG REF: 003/ OTH REF: 009

Card 2/2



ACC NR: AP7005000

SOURCE CODE: UR/0048/66/030/009/1549/1551

AUTHOR: Goryunov, V.A.; Levshin, V.L.; Stankova, A.V.

ORG: Physics Department, Moscow State University im. M.V. Lomonosov (Fizicheskii fakul'tet Moskovskogo gosudarstvennogo universiteta)

TITLE: Investigation of the redistribution of current carriers among traps under the influence of infrared irradiation in excited zinc sulfide phosphors /Report, Fourteenth All-Union Conference on Luminescence (Crystal Phosphors) held at Riga, 16-23 Sept. 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.30, no.9, 1966, 1549-1551

TOPIC TAGS: luminescence, zinc sulfide, electron trapping, electron distribution, irradiation

ABSTRACT: The authors investigated the redistribution under the influence of monochromatic infrared irradiation of carriers among traps in ZnS single crystal and ZnS, ZnS:Mn, ZnS:Cu:Pb, ZnS:Ag, ZnS:In, ZnS:Cu:Co and other similar powder phosphors. All the investigated materials have two well-separated sets of traps of different depths. The transfer by infrared irradiation of electrons from the deeper to the shallower traps was investigated with the aid of glow curves, optical quenching of luminescence, and stimulated conductivity. Only the glow curve experiments are described, and some of the results obtained with ZnS:Mn are present graphically.

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ACC NR: AP7005000

In these experiments the phosphor was excited at a relatively high temperature at which the shallow traps were empty, and was subsequently cooled and infrared irradiated at a low temperature. The glow curve was then recorded, which revealed the relative populations of the deep and shallow traps. The infrared irradiation was conducted at different temperatures and with different wavelengths. It was found that prolonged infrared irradiation resulted in an equilibrium distribution of electrons between the deep and shallow traps, which was not changed by further irradiation. When an infrared irradiated phosphor was heated, so that its shallow traps were emptied, and was then cooled without further excitation and again infrared irradiated at the low temperature, there took place a further transfer of electrons from the deep to the shallow traps. For each infrared sensitive phosphor there could be found a wavelength whose effect on the trapped electrons was temperature independent; the quantum energy corresponding to this wavelength was directly proportional to the depth of the traps. Orig. art. has: 2 figures.

SUB CODE: 20

SUBM DATE: none

ORIG. REF: 002

Card 2/2

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